CLAIMS

I/WE CLAIM:

1. A laser monitoring system, comprising:

a spectrometer meter adapted to measure an unknown bandwidth of a spectrum of light emitted from the laser, comprising:

an optical bandwidth measuring unit adapted to provide as an output a measured parameter, which is indicative of a parameter of the unknown bandwidth of the spectrum being measured;

a reported parameter computing unit adapted to compute a reported parameter of the unknown bandwidth of the spectrum being measured according to the formula:

Reported Parameter ("RP") = A * (Measured Parameter ("MP")) + C, wherein the RP and MP are a different type of parameter and the values of A and C are determined based upon calibration of the optical bandwidth measuring unit MP response for light of known valued of RP.

2. The apparatus of claim 1 further comprising:

the optical bandwidth measuring unit comprises an interferometric or dispersive optical instrument.

3. The apparatus of claim 1 further comprising:

the optical bandwidth measuring unit comprises an etalon.

4. The apparatus of claim 2 further comprising:

the optical bandwidth measuring unit comprises an etalon.

5. The apparatus of claim 1 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

6. The apparatus of claim 2 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

7. The apparatus of claim 3 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

8. The apparatus of claim 4 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

9. The apparatus of claim 1 further comprising:

RP is at EX% and MP is at FWXM.

10. The apparatus of claim 2 further comprising:

RP is at EX% and MP is at FWXM.

11. The apparatus of claim 3 further comprising:

RP is at EX% and MP is at FWXM.

12. The apparatus of claim 4 further comprising:

RP is at EX% and MP is at FWXM.

13. A spectrometer for measuring an unknown bandwidth of a spectrum of light, comprising:

an optical bandwidth measuring unit adapted to provide as an output a measured parameter, which is indicative of a parameter of the unknown bandwidth of the spectrum being measured;

a reported parameter computing unit adapted to compute a reported parameter of the unknown bandwidth of the spectrum being measured according to the formula:

Reported Parameter ("RP") = A * (Measured Parameter ("MP")) + C,

wherein the RP and MP are a different type of parameter and the values of A and C are determined based upon calibration of the optical bandwidth measuring unit MP response for light of known valued of RP.

14. The apparatus of claim 13 further comprising:

the optical bandwidth measuring unit comprises an interferometric or dispersive optical instrument.

15. The apparatus of claim 13 further comprising:

the optical bandwidth measuring unit comprises an etalon.

16. The apparatus of claim 14 further comprising:

the optical bandwidth measuring unit comprises an etalon.

17. The apparatus of claim 13 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

18. The apparatus of claim 14 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

19. The apparatus of claim 15 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

20. The apparatus of claim 16 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

21. The apparatus of claim 13 further comprising:

RP is at EX% and MP is at FWXM.

22. The apparatus of claim 14 further comprising:

RP is at EX% and MP is at FWXM.

23. The apparatus of claim 15 further comprising:

RP is at EX% and MP is at FWXM.

24. The apparatus of claim 16 further comprising:

RP is at EX% and MP is at FWXM.

25. A laser control system, comprising:

spectrometer means for measuring an unknown bandwidth of a spectrum of light emitted from the laser, comprising:

an optical bandwidth measuring means for providing as an output a measured parameter, which is indicative of a parameter of the unknown bandwidth of the spectrum being measured;

a reported parameter computing means for computing a reported parameter of the unknown bandwidth of the spectrum being measured according to the formula:

Reported Parameter ("RP") = A * (Measured Parameter ("MP")) + C,

wherein the RP and MP are a different type of parameter and the values of A and C are determined based upon calibration of the optical bandwidth measuring unit MP response for light of known valued of RP.

26. The apparatus of claim 25 further comprising:

the optical bandwidth measuring means comprises an interferometric or dispersive optical instrument.

27. The apparatus of claim 25 further comprising:

the optical bandwidth measuring means comprises an etalon.

28. The apparatus of claim 26 further comprising:

the optical bandwidth measuring means comprises an etalon.

29. The apparatus of claim 25 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

30. The apparatus of claim 26 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

31. The apparatus of claim 27 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

32. The apparatus of claim 28 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

33. The apparatus of claim 25 further comprising:

RP is at EX% and MP is at FWXM.

34. The apparatus of claim 26 further comprising:

RP is at EX% and MP is at FWXM.

35. The apparatus of claim 27 further comprising:

RP is at EX% and MP is at FWXM.

36. The apparatus of claim 28 further comprising:

RP is at EX% and MP is at FWXM.

37. A spectrometer for measuring an unknown bandwidth of a spectrum of light, comprising:

an optical bandwidth measuring means for providing as an output a measured parameter, which is indicative of a parameter of the unknown bandwidth of the spectrum being measured;

a reported parameter computing means for compute a reported parameter of the unknown bandwidth of the spectrum being measured according to the formula:

Reported Parameter ("RP") = A * (Measured Parameter ("MP")) + C,

wherein the RP and MP are different types or parametes and the values of A and C are determined based upon calibration of the optical bandwidth measuring unit MP response for light of known valued of RP.

38. The apparatus of claim 37 further comprising:
the optical bandwidth measuring means comprises an interferometric or dispersive optical instrument.

39. The apparatus of claim 37 further comprising:
the optical bandwidth measuring means comprises an etalon.

40. The apparatus of claim 38 further comprising:
the optical bandwidth measuring means comprises an etalon.

41. The apparatus of claim 37 further comprising:
RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

42. The apparatus of claim 38 further comprising:
RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

43. The apparatus of claim 39 further comprising:
RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

44. The apparatus of claim 40 further comprising:
RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

45. The apparatus of claim 37 further comprising:
RP is at EX% and MP is at FWXM.

46. The apparatus of claim 38 further comprising:
RP is at EX% and MP is at FWXM.

47. The apparatus of claim 39 further comprising:

RP is at EX% and MP is at FWXM.

48. The apparatus of claim 40 further comprising:

RP is at EX% and MP is at FWXM.

49. A method for controlling a laser, comprising:

utilizing a spectrometer means for measuring an unknown bandwidth of a spectrum of light emitted from the laser, by:

providing a measurement of a measured parameter, which is indicative of a parameter of the unknown bandwidth of the spectrum being measured;

computing a reported parameter of the unknown bandwidth of the spectrum being measured according to the formula:

Reported Parameter ("RP") = A * (Measured Parameter ("MP")) + C,

wherein the RP and MP are a different type of parameter and the values of A and C are determined based upon calibration of the optical bandwidth measuring unit MP response for light of known valued of RP.

50. The method of claim 49 further comprising:

utilizing an interferometric or dispersive optical instrument for measuring the optical bandwidth.

51. The method of claim 49 further comprising:

utilizing an etalon for measuring the optical bandwidth.

52. The apparatus of claim 50 further comprising:

utilizing an etalon for measuring the optical bandwidth.

53. The method of claim 49 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

54. The method of claim 50 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

55. The method of claim 51 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

56. The method of claim 52 further comprising:

RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

57. The method of claim 49 further comprising:

RP is at EX% and MP is at FWXM.

58. The method of claim 50 further comprising:

RP is at EX% and MP is at FWXM.

59. The method of claim 51 further comprising:

RP is at EX% and MP is at FWXM.

60. The method of claim 52 further comprising:

RP is at EX% and MP is at FWXM.

61. A method for measuring an unknown bandwidth of a spectrum of light, comprising:

utilizing an optical bandwidth measuring means to provide as an output a measured parameter, which is indicative of a parameter of the unknown bandwidth of the spectrum being measured;

computing a reported parameter of the unknown bandwidth of the spectrum being measured according to the formula:

Reported Parameter ("RP") = A * (Measured Parameter ("MP")) + C,

wherein the RP and MP are different types or parametes and the values of A and C are determined based upon calibration of the optical bandwidth measuring unit MP response for light of known valued of RP.

62. The method of claim 61 further comprising:
utilizing an interferometric or dispersive optical instrument to provide the optical bandwidth measurement.

63. The method of claim 61 further comprising:
utilizing an etalon to provide the optical bandwidth measurement.

64. The method of claim 62 further comprising:
utilizing an etalon to provide the optical bandwidth measurement.

65. The method of claim 61 further comprising:
RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

66. The apparatus of claim 62 further comprising:
RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

67. The apparatus of claim 63 further comprising:
RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

68. The apparatus of claim 64 further comprising:
RP is at FWXM and MP is at FWX'M, wherein $X \neq X'$.

69. The apparatus of claim 61 further comprising:
RP is at EX% and MP is at FWXM.

70. The apparatus of claim 62 further comprising:
RP is at EX% and MP is at FWXM.

71. The apparatus of claim 63 further comprising:
RP is at EX% and MP is at FWXM.

72. The apparatus of claim 64 further comprising:
RP is at EX% and MP is at FWXM.